



Source Water Assessment Program (SWAP) Report For Children's Place Preschool

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	Children's Place Preschool
PWS Address	Forests Ave.
City/Town	Eastham, Massachusetts
PWS ID Number	4086051
Local Contact	Catherine McCauley, Executive Director
Phone Number	508 240-3310

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	4086051-01G	150	444	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Area

1. Description of the Water System

Children's Place Preschool is a public water supply currently serving a population of 120 students and staff. The school is served by Well #1, which is located in a wooded area northwest of the school. Well #1 is a 4-inch diameter well drilled to a final depth of 35 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Well #1 was approved by the Department in a letter dated November 16, 1995 after completing the new source approval process. The average daily withdrawal for the well is limited to 2000 gallons per day, based on the current Zone I of 150 feet and Interim Wellhead Protection Area (IWPA) of 444 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

recharge area to the well may be significantly larger or smaller than the IWPA. Please refer to the attached map of the Zone I and IWPA. The well serving the facility has no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1

2. Discussion of Land Uses in the Protection Areas

Zone I

The well meets DEP's restrictions that only allow water supply related activities in Zone Is. The public water supplier owns and/or controls all land encompassed by Zone I. The facility's Zone I is comprised entirely of forested woodland.

Recommendations:

- ✓ Monitor your water usage. Keep your total water consumption below the average of 2000 gallons per day to maintain compliance with the calculated Zone I and IWPA protective radii.
- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Prohibit public access to the well and pump house by locking facilities, gating roads, and posting signs.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism; check any above ground tanks for leaks, etc.

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Residential Land use,**
2. **Septic systems, and**
3. **Landscaping and Lawn Care.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of at least one Moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Residential Land Use** - If managed improperly, household hazardous waste, septic systems, lawn care, and pet waste can all contribute to groundwater contamination. Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. The septic system leaching fields for residential

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Residential	No	Well #1	Moderate	Septic systems, fuel storage, fertilizer and pesticide use
Storage, and use of hazardous materials	No	Well #1	Moderate	Very small quantities of cleaning supplies
Parking lot, driveways & roads	No	Well #1	Moderate	Limit road salt usage and provide drainage away from wells
Landscaping and Lawn care	No	Well #1	Moderate	Fertilizer and pesticide use
Septic System	No	Well #1	Moderate	Refer to septic systems brochure in the appendix
Structures	No	Well #1	-	School buildings

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

homes are located within the IWPA. If a septic system fails or is not properly maintained, it could be a potential source of microbial contamination. Fertilizers and pesticides contain hazardous chemicals that can travel through the soil and contaminate ground water if over-applied. Pet waste may contain bacteria, parasites, or viruses that are a health risk. Water supplies may also be threatened from improper use and disposal of chemical products used in homes or businesses. Educating residents and businesses on proper disposal of these materials is the best defense against pollution.

Recommendations:

- ✓ Proper Household Hazardous Waste Disposal - Residents should dispose of used oil, antifreeze, paints, and other household chemicals properly - not in septic systems. Encourage residents to participate in Household Hazardous Waste Collection days or centers. Educate residents on septic systems about proper disposal practices. Refer to <http://www.state.ma.us/dep/brp/files/yoursyst.htm> for additional information. .
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ Encourage residents to upgrade fuel oil storage tanks to incorporate proper containment and safety practices. The Department recommends that residents have the components of their heating system inspected, maintained and replaced or upgraded regularly. Oil lines should be inspected (i.e. furnace to tank) for corrosion or pitting and copper lines should be replaced with lines encased in a protective sleeve or install UL listed oil safety valve to prevent leaks (refer to attachments). Any modifications must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements.
- ✓ Provide educational materials to residents about the proper application of pesticides or fertilizers on lawns. Information on environmentally sound lawn care practices is available from the Massachusetts Department of Food and Agriculture Pesticide Bureau's at <http://www.massdfa.org>.

2. **Landscaping and Lawn Care** - The Preschool's lawn area is located within the IWPA. Over-application of pesticides and fertilizers on lawns is a potential source of contamination to the water supply.

Recommendation:

- ✓ Use best management practices (BMPs) for applying, handling, and storage of pesticides and fertilizers (refer to attachments on fertilizer and pesticide use).

3. **Septic System** - The school's septic system is located within the IWPA. The leaching field is located approximately 170 feet east of Well #1.

Recommendation:

- ✓ Staff should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers and certified operator.
- ✓ Septic system component should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

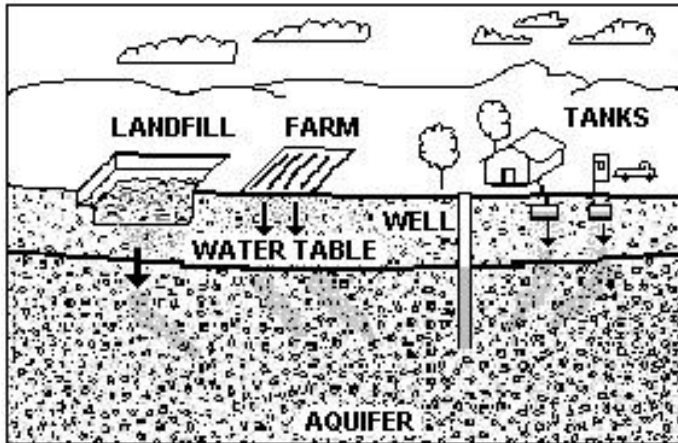


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact Mark Dakers in DEP's Lakeville office at (508) 946-2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:
www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier, town boards, and the local media.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Children's Place Preschool should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Prohibit public access to the well and pumphouse by locking facilities, gating roads, and posting signs.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, etc.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in Eastham to include the Children's Place Preschool IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the

"Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Pesticide Use Fact sheet
- Healthy Schools Fact Sheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form
- A Homeowner's Guide to Avoiding Costly Heating Oil System Leaks
- Heating Oil Delivery Lines, A Homeowner's Guide to Preventing Leaks